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72242(6653)

Amendments to the Claims:

1-19. (canceled)

20. (currently amended) A method of integrated circuit design comprising steps of:

- (a) placing and wiring an integrated circuit design;
- (b) generating a slack graph of critical paths in the integrated circuit design;
- (c) identifying bottlenecks in the critical paths wherein identifying bottlenecks comprises determining which nets in the slack graph include more critical paths when compared to other nets in the slack graph; and

~~The method of claim 19 further comprising a step of~~
(d) assigning a higher priority to reducing path edge delays at the bottlenecks than to other path edge delays.

21. (currently amended) A method of integrated circuit design comprising steps of:

- (a) placing and wiring an integrated circuit design;
- (b) generating a slack graph of critical paths in the integrated circuit design;
- (c) identifying bottlenecks in the critical paths wherein identifying bottlenecks comprises determining which nets in the slack graph include more critical paths when compared to other nets in the slack graph ~~The method of claim 19 wherein identifying bottlenecks step (c) comprises a step of: (c1)~~
calculating a forward node weight for each corresponding node wherein the forward node weight is equal to a minimum forward edge weight of all incoming edges to the corresponding node.

22. (currently amended) The method of Claim 21

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wherein step (c) comprises ~~a step of: (c2)~~ calculating a forward edge weight for each outgoing edge wherein the forward edge weight is equal to the forward node weight of the corresponding node plus a number of outgoing edges from the corresponding node minus one.

23. (currently amended) The method of Claim 22 wherein step (c) comprises ~~a step of: (c3)~~ calculating a reverse node weight for each corresponding node wherein the reverse node weight is equal to a minimum reverse edge weight of all outgoing edges from the corresponding node.

24. (currently amended) The method of Claim 23 wherein step (c) comprises ~~a step of: (c4)~~ calculating a reverse edge weight for each incoming edge wherein the reverse edge weight is equal to the reverse node weight of the corresponding node plus a number of incoming edges to the corresponding node minus one.

25. (currently amended) The method of Claim 24 wherein step (c) comprises ~~a step of: (c5)~~ summing the forward edge weight and the reverse edge weight for each edge in the slack graph.

26. (currently amended) The method of Claim 25 wherein step (c) comprises ~~a step of: (c6)~~ setting a net weight value of a corresponding net equal to a minimum value of the sum of the forward edge weight and the reverse edge weight associated with each edge so that a relatively low net weight value indicates that the corresponding net belongs to a bottleneck.

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27. (canceled)

28. (currently amended) A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to:

- (a) place and wire an integrated circuit design;
- (b) generate a slack graph of critical paths in the integrated circuit design;
- (c) identify bottlenecks in the critical paths; and
~~The computer readable medium of Claim 9 further comprising a step of-~~
- (d) assigning a higher priority to reducing path edge delays at the bottlenecks than to other path edge delays.

29. (currently amended) A computer-readable medium having stored thereon a plurality of instructions, the plurality of instructions including instructions which, when executed by a processor, cause the processor to:

- (a) place and wire an integrated circuit design;
- (b) generate a slack graph of critical paths in the integrated circuit design; and
- (c) identify bottlenecks in the critical paths
~~The computer readable medium of Claim 9 wherein identifying bottlenecks step (c) comprises a step of-~~ (c1) calculating a forward node weight for each corresponding node wherein the forward node weight is equal to a minimum forward edge weight of all incoming edges to the corresponding node.

30. (currently amended) The computer-readable medium of Claim 29 wherein step (c) comprises ~~a step of-~~ (c2) calculating a forward edge weight for each outgoing edge

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wherein the forward edge weight is equal to the forward node weight of the corresponding node plus a number of outgoing edges from the corresponding node minus one.

31. (currently amended) The computer-readable medium of Claim 30 wherein step (c) comprises ~~a step of: (c3)~~ calculating a reverse node weight for each corresponding node wherein the reverse node weight is equal to a minimum reverse edge weight of all outgoing edges from the corresponding node.

32. (currently amended) The computer-readable medium of Claim 31 wherein step (c) comprises ~~a step of: (c4)~~ calculating a reverse edge weight for each incoming edge wherein the reverse edge weight is equal to the reverse node weight of the corresponding node plus a number of incoming edges to the corresponding node minus one.

33. (currently amended) The computer-readable medium of Claim 32 wherein step (c) comprises ~~a step of: (c5)~~ summing the forward edge weight and the reverse edge weight for each edge in the slack graph.

34. (currently amended) The computer-readable medium of Claim 33 wherein step (c) comprises ~~a step of: (c6)~~ setting a net weight value of a corresponding net equal to a minimum value of the sum of the forward edge weight and the reverse edge weight associated with each edge so that a relatively low net weight value indicates that the corresponding net belongs to a bottleneck.

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